

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Pg 1 of 8

PATENT NO. : 7,062,498 B2
APPLICATION NO. : 10/027,914
DATED : June 13, 2006
INVENTOR(S) : Al-Kofahi, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

The title page showing the illustrative figure should be deleted to be replaced with the attached title page.

The drawing sheet, consisting of Fig. 2, should be deleted to be replaced with the drawing sheet, consisting of Fig. 2, as shown on the attached page.



pg 298

US007062498B2

(12) **United States Patent**
Al-Kofahi et al.

(10) Patent No.: **US 7,062,498 B2**
(45) Date of Patent: **Jun. 13, 2006**

(54) **SYSTEMS, METHODS, AND SOFTWARE FOR CLASSIFYING TEXT FROM JUDICIAL OPINIONS AND OTHER DOCUMENTS**

(75) Inventors: Khalid Al-Kofahi, Webster, NY (US); Peter Jackson, Burnsville, MN (US); Timothy Earl Travers, Rochester, NY (US); Alex Tyrell, Canandaigua, NY (US)

(73) Assignee: **Thomson Legal Regulatory Global AG, Thalwil (CH)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 401 days.

(21) Appl. No.: **10/027,914**

(22) Filed: **Dec. 21, 2001**

(65) **Prior Publication Data**

US 2003/0101181 A1 May 29, 2003

Related U.S. Application Data

(60) Provisional application No. 60/336,862, filed on Nov. 2, 2001.

(51) **Int. Cl.**
G06F 17/00 (2006.01)

(52) **U.S. Cl.** 707/101; 715/530

(58) **Field of Classification Search** 707/100, 707/101; 715/530, 531

See application file for complete search history.

(56) **References Cited**

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(Continued)

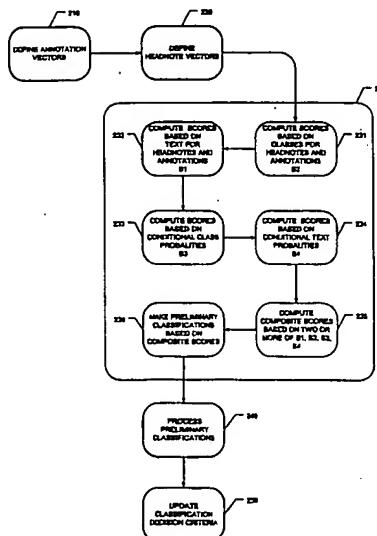
Primary Examiner—Uyen Le

(74) **Attorney, Agent, or Firm**—Schwegman, Lunberg, Woessner & Kluth, P.A.

(57) **ABSTRACT**

To reduce cost and improve accuracy, the inventors devised systems, methods, and software to aid classification of text, such as headnotes and other documents, to target classes in a target classification system. For example, one system computes composite scores based on: similarity of input text to text assigned to each of the target classes; similarity of non-target classes assigned to the input text and target classes; probability of a target class given a set of one or more non-target classes assigned to the input text; and/or probability of the input text given text assigned to the target classes. The exemplary system then evaluates the composite scores using class-specific decision criteria, such as thresholds, ultimately assigning or recommending assignment of the input text to one or more of the target classes. The exemplary system is particularly suitable for classification systems having thousands of classes.

17 Claims, 6 Drawing Sheets



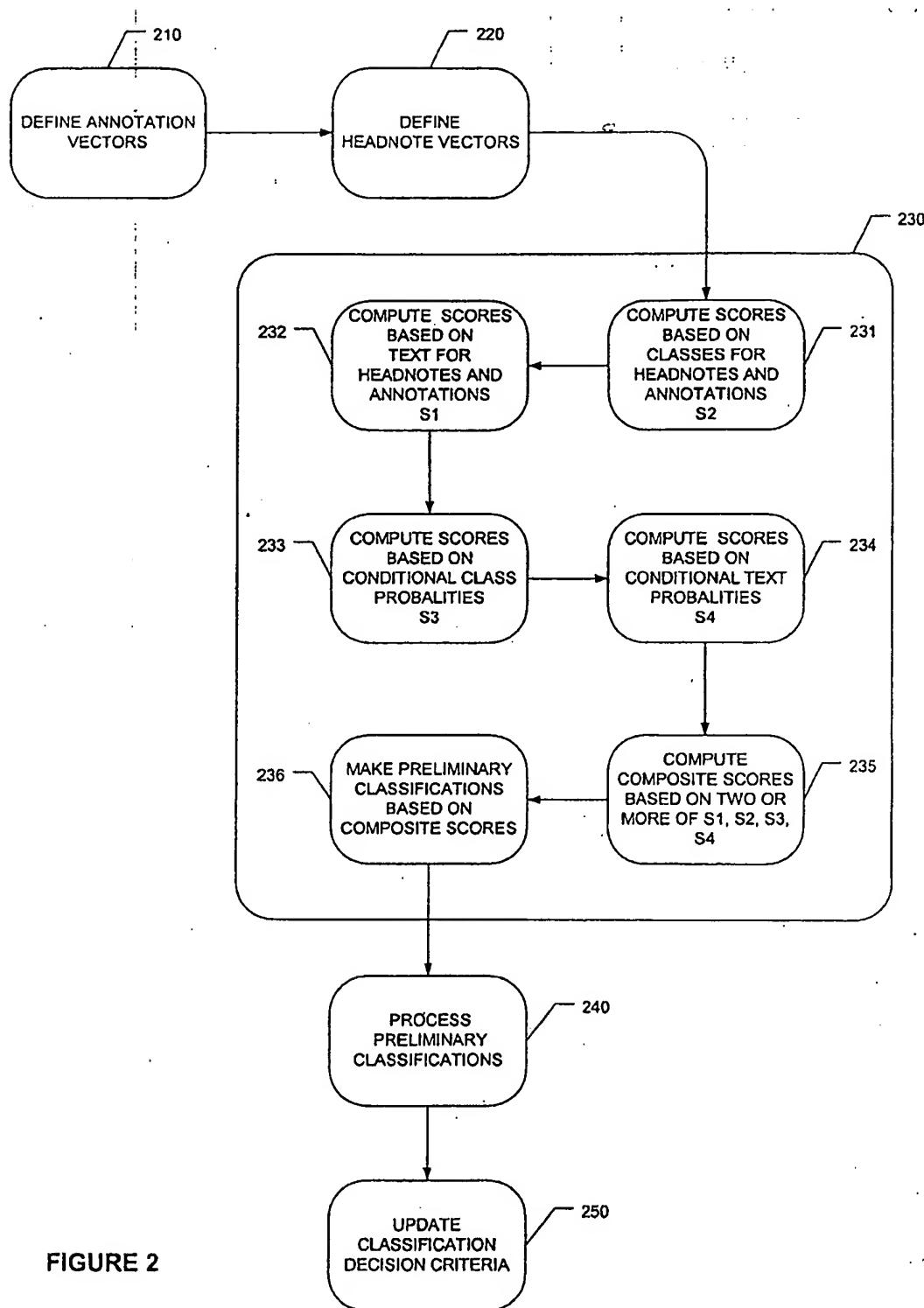


FIGURE 2

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PTO/SB/44 (02-01)
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10/02/2006

PATENT NO

7,062,498

Page (1) of 5

DATED

June 13, 2006

INVENTOR(S)

Al-Kofahi et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the ~~face~~ page, in field (56), under "Foreign Patent Documents", in column 2, line 1, after "11/2000" insert -- G06F 17/30 --.

On the ~~face~~ page, in field (56), under "Other Publications", in column 2, line 1, delete "et al," and insert -- et al., --, therefor.

On the ~~face~~ page, in field (56), under "Attorney, Agent, or Firm", in column 2, line 1, delete "Lunberg," and insert -- Lundberg, --, therefor.

On page 2, in field (56), under "Other Publications", in column 1, line 1, delete "et al," and insert -- et al., --, therefor.

On page 2, in field (56), under "Other Publications", in column 1, line 4, delete "et al," and insert -- et al., --, therefor.

On page 2, in field (56), under "Other Publications", in column 1, line 13, delete "Management" and insert -- Management --, therefor.

On page 2, in field (56), under "Other Publications", in column 2, line 28, delete "224-321." and insert -- 224-231. --, therefor.

On Sheet 2 of 6, in Fig. 2 (Block - 232), line 1, delete "COMPUTE" and insert -- COMPUTE --, therefor.

On Sheet 2 of 6, in Fig. 2 (Block - 232), line 2, delete "BASED" and insert -- BASED --, therefor.

In column 2, line 35, after "computing and" delete "and".

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SCHWEGMAN, LUNDBERG, WOESSNER, & KLUTH, P.A.
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Minneapolis, MN 55402

Atty Docket No: 4962.015US1

PATENT NO. 7,062,498

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Page (2) of 5

16027914 B2

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

- In column 2, line 64, delete "320." and insert -- 320; --, therefor.
- In column 2, line 67, delete "100." and insert -- 100; --, therefor.
- In column 4, line 8, delete "Exemplary Headnote" and insert -- Exemplary Headnote: -- as a new heading on line 9.
- In column 4, line 14, delete "superior" and insert -- superior --, therefor.
- In column 4, line 14, after "authority" insert -- . --.
- In column 4, line 15, after "identifier" insert -- : --.
- In column 6, line 23, delete "V_a" and insert -- v_a --, therefor.
- In column 6, line 25, delete "v_a=tf_a¹* idf_a¹," and insert -- v_a=tf_a'*idf_a', --, therefor.
- In column 6, line 26, delete "tf_a¹" and insert -- tf_a' --, therefor.
- In column 6, line 31, delete "idf_a¹" and insert -- idf_a' --, therefor.
- In column 6, line 32, delete "idf_a¹" and insert -- idf_a' --, therefor.
- In column 6, line 39, delete "df_a¹," and insert -- df_a' --, therefor.

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PATENT NO : 7,062,498

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DATED : June 13, 2006

INVENTOR(S) : Al-Kofahi et al.

105279/482

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 7, line 49, delete “-” and insert - - “.” - -, therefor.

In column 7, line 50, delete “ V_a^1 ” and insert - - V_a^1 - -, therefor.

In column 7, line 50, delete “ V_h^1 ” and insert - - V_h^1 - -, therefor.

In column 7, line 54, delete “teems” and insert - - terms - -, therefor.

In column 7, line 64, delete “ V_a^C ” and insert - - V_a^C - -, therefor.

In column 7, line 64, delete “ V_b^C ” and insert - - V_b^C - -, therefor.

In column 7, line 66, delete “ V_a^C ” and insert - - V_a^C - -, therefor.

In column 7, line 67, delete “ $V_a^C = tf_a^C * idf_a^C$,” and insert - - $V_a^C = tf_a^C * idf_a^C$ - -, therefor.

In column 8, line 1, delete “ tf_a^C ” and insert - - tf_a^C - -, therefor.

In column 8, line 2, delete “ idf_a^C ” and insert - - idf_a^C - -, therefor.

In column 8, line 3, delete “ idf_a^C ” and insert - - idf_a^C - -, therefor.

In column 8, line 21, delete “ V_h^C ” and insert - - V_h^C - -, therefor.

In column 8, line 23, delete “ V_h^C ” and insert - - V_h^C - -, therefor.

In column 8, line 25, delete “ $V_h^C = tf_h^C * idf_h^C$,” and insert - - $V_h^C = tf_h^C * idf_h^C$ - -, therefor.

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PATENT NO. 7,062,498

Page (4) of 5

DATED : June 13, 2006

INVENTOR(S) : Al-Kofahi et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 8, line 26, delete " if_h^c " and insert - - if_h^c - -, therefor.

In column 8, line 27, delete " idf_h^c " and insert - - idf_h^c - -, therefor.

In column 8, line 28, delete " idf_h^c " and insert - - idf_h^c - -, therefor.

In column 10, line 51, delete " $CS_a^{h_0}$ " and insert - - CS_a^h - -, therefor.

In column 10, line 55, delete " $CS_a^{h_0}$ " and insert - - CS_a^h - -, therefor.

In column 10, line 61, delete " $S_{a,l}^{h_0}$ " and insert - - $S_{a,l}^h$ - -, therefor.

In column 10, line 63, delete "i -th" and insert - - i-th - -, therefor.

In column 11, line 8, delete " $CS_a^{h_0}$ " and insert - - CS_a^h - -, therefor.

In column 11, line 43, delete " $CS_a^{h_0}$ " and insert - - CS_a^h - -, therefor.

In column 15, line 13, delete "accord" and insert - - accordance - -, therefor.

In column 15, line 38, delete " F_c^1 " and insert - - F_c^1 - -, therefor.

In column 15, line 38, delete " F_c^2 ," and insert - - F_c^2 - -, therefor.

In column 15, line 40, delete " $\{(b_i|S_i^1=s)\}$ " and insert - - $\{(b_i|S_i^1=s)\}$ - -, therefor.

In column 15, line 45, delete " $\{(b_i|S_i^2=s)\}$ " and insert - - $\{(b_i|S_i^2=s)\}$ - -, therefor.

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PATENT NO : 7,062,498

Page (5) of 5

DATED : June 13, 2006

INVENTOR(S) : Al-Kofahi et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 15, line 52, delete "h," and insert - - h_i - -, therefor.

In column 15, line 53, delete " S_i^1 " and insert - - S_i^1 - -, therefor.

In column 15, line 54, delete "h," and insert - - h_i - -, therefor.

In column 15, line 55, delete " S_i^2 " and insert - - S_i^2 - -, therefor.

In column 15, line 56, delete "h," and insert - - h_i - -, therefor.

In column 15, line 60, delete " $\{(h_i | S_i^1 = s)\}$ " and insert - - $\{(h_i | S_i^1 = s)\}$ - -, therefor.

In column 15, line 62, delete " $\{(h_i | S_i^2 = s)\}$ " and insert - - $\{(h_i | S_i^2 = s)\}$ - -, therefor.

In column 16, line 17, delete "decision-maker" and insert - - decisionmaker - -, therefor.

In column 16, line 24, delete "EMBODIMENTS" and insert - - APPLICATIONS - -, therefor.

In column 16, line 46, delete "all right" and insert - - alright - -, therefor.

In column 16, line 65, delete "everwhere's" and insert - - everywhere's - -, therefor.

In column 17, line 19, delete "nor-normally" and insert - - nor normally - -, therefor.

In column 17, line 20, delete "offhis" and insert - - ofhis - -, therefor.

In column 17, line 26, delete "quitc" and insert - - quite - -, therefor.

In column 17, lines 35-36, delete "thercin" and insert - - therein - -, therefor.

In column 18, line 31, in Claim 3, delete "thresholds" and insert - - threshold - -, therefor.

In column 18, line 33, in Claim 3, delete "threshold" and insert - - thresholds - -, therefor.

In column 18, line 50, in Claim 7, delete "Tho" and insert - - The - -, therefor.

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